

What is claimed is:

1. A method for use by a database manager in extracting information from a relational database in response to a joining query, the relational database including a hub table and a plurality of dimension tables, each dimension table including a plurality of records each of which includes a plurality of fields, wherein each dimension table is related to the hub table by a key field such that each dimension table includes in each record such a key field and the hub table also includes the key field, the joining query selecting at least one field from at least one dimension table, the method comprising the steps of:

a) examining the joining query and providing an aliasing list indicating at least one field from at least one dimension table indicated in the joining query and also indicating the identity of the at least one dimension table, the aliasing list thereby providing a list of to-be-aliased fields and corresponding dimension table identities;

b) providing an alias table for the at least one field in the aliasing list, the alias table including each value of the field occurring in the at least one dimension table and also including an alias value for each value of the field, and using as the alias value the value of the key field relating the dimension table to the hub table, the alias table thereby providing a table of alias field values and corresponding aliased field values; and

c) transforming the joining query into a reduced query in which the aliased field values are replaced by the alias values.

2. The method of claim 1, wherein an alias table is created for a field from a dimension table only if no other field from the dimension table is selected by the joining query.

3. The method of claim 1, further comprising:

providing a final response to the query, wherein in providing the final response, a response primitive is first provided including the alias, and the final response is derived from the response primitive by replacing in the response primitive the alias values with the aliased field values using the alias table.

4. A computer readable medium comprising instructions for performing the method claimed in claim 1.

5. A query for use by a database manager in extracting information from a relational database, the relational database including a hub table and a plurality of dimension tables, each dimension table including a plurality of records each of which includes a plurality of fields, each dimension table related to the hub table by a key field, the query comprising a select clause in which a field is selected from one of the dimension tables using an alias, the alias indicating, by way of an alias table, the value of the selected field in the dimension table.

6. The query of claim 5, wherein the alias is the key field relating the dimension table to the hub table.

7. A database manager for extracting information from a relational database in response to a joining query, the relational database including a hub table and a plurality of dimension tables, each dimension table including a plurality of records each of which includes a plurality of fields, wherein

each dimension table is related to the hub table by a key field such that each dimension table includes in each record such a key field and the hub table also includes the key field, the joining query selecting at least one field from at least one dimension table, the database manager comprising:

- a) means for examining the joining query and providing an aliasing list indicating at least one field from at least one dimension table indicated in the joining query and also indicating the identity of the at least one dimension table, the aliasing list thereby providing a list of to-be-aliased fields and corresponding dimension table identities;
- b) means for providing an alias table for the at least one field in the aliasing list, the alias table including each value of the field occurring in the at least one dimension table and also including an alias value for each value of the field, and using as the alias value the value of the key field relating the dimension table to the hub table, the alias table thereby providing a table of alias field values and corresponding aliased field values; and
- c) means for transforming the joining query into a reduced query in which the aliased field values are replaced by the alias values.

8. The database manager of claim 7, further comprising means for providing a final response to the query, wherein in providing the final response, a response primitive is first provided including the alias, and the final response is derived from the response primitive by replacing in the response primitive the alias values with the aliased field values using the alias table.

9. The database manager of claim 7, wherein an alias table is created for a field from a dimension table only if no other field from the dimension table is selected by the joining query.

10. A method for constructing a query statement for extracting data from a relational database, comprising:

providing aliases instead of actual values for leaf nodes of the relational database, and

selecting all the aliases for the leaf node from a fact table instead of an individual dimension table, thereby reducing the requirement for joins in said query statement.

11. A method in accordance with claim 10, wherein joins are eliminated from said query statement.

1. FEDERAL BUREAU OF INVESTIGATION  
U.S. DEPARTMENT OF JUSTICE